

## LINCOLN CITY/LANCASTER COUNTY PLANNING STAFF REPORT

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for January 7, 2004 PLANNING COMMISSION MEETING

**P.A.S.:** Four Winds Estates Community Unit Plan  
Co Special Permit #206, Preliminary Plat 03009

**Note:** This is a combined staff report for related items. This report contains a single background and analysis section for all items. However, there are separate conditions provided for each individual application.

**PROPOSAL:** A community unit plan and preliminary plat for 7 acreage residential units.

**LOCATION:** Northeast of the intersection of Southwest 84<sup>th</sup> Street and West Old Cheney Road.

### **WAIVER REQUESTS:**

1. Yard setbacks.
2. Minimum lot area
3. Ornamental street lighting.
4. Sidewalks.
5. Street trees.
6. Landscape screens.
7. Stormwater Detention
8. Block length.

**LAND AREA:** 148.59 acres, more or less.

**CONCLUSION:** This is an Ag Community Unit Plan, proposing to “cluster” the allowed dwelling units to 7 acreage lots. Waivers requested are typical of a rural subdivision and are provided for in the code. No bonuses are being requested. At the December 1, 2003 Commons, Planning staff committed to providing a draft Build Through package of regulation changes and design standards for the March 2004 Commons meeting. With that in mind, staff would recommend deferral of this item until Build Through provisions are adopted.

### **RECOMMENDATION:**

Co. Special Permit #206  
Preliminary Plat # 03009

Deferral  
Deferral

Waivers

1. Yard Setbacks:

Approval

2.	Minimum lot area:	Approval
3.	Ornamental lighting	Approval
4.	Sidewalks	Approval
5.	Street trees	Approval
6.	Landscape screens	Approval
7.	Stormwater Detention	Approval
8.	Block length	Approval

### **GENERAL INFORMATION**

**LEGAL DESCRIPTION:** Lots 9 and 10 Irregular Tracts, located in the SW 1/4 of Section 11, T9N, R5E of the 6<sup>th</sup> P.M. , Lancaster County, Nebraska.

**EXISTING ZONING:** AG Agriculture

**EXISTING LAND USE:** Farmland

### **SURROUNDING LAND USE AND ZONING:**

North:	Farmland	AG
South:	Farmland, one dwelling	AG
East:	Farmland, one dwelling	AG
West:	Farmland, State spur 55A	AG

**HISTORY:** Zoned AG in the 1979 zoning update. The draft Build-Trough Report and Cost of Service Report was presented to the City County Commons on October 7, 2003.

**COMPREHENSIVE PLAN SPECIFICATIONS:** The 2025 Comprehensive Plan shows this area as Agriculture and Ag Stream Corridor, partially located in Tier III. A cluster is permitted by special permit in the AG district. In relation to clustering in the Agriculture area, the Comprehensive Plan states:

“New ‘urban acreage’ development should only be permitted in Tier II and Tier III area of Lincoln and near towns under higher design standards based upon a “buildthrough” model and without use of sanitary improvement districts. The “build through” design standards should address, along with other items deemed necessary to the study:

- a preliminary plan lot layout that accommodates first phase low density acreages with rural water and sewer systems. The preliminary plat would also show future lot splits

as a second phase to permit the urban infrastructure to be built through and urbanization to occur if and when annexed by a city or town is deemed appropriate. The future lot splits will increase density in an urban form and provide income to property owners to defray the increases in city taxes, services and infrastructure costs;

- a lot layout that meets the various elements of the Comprehensive Plan; and
- a development agreement that runs with the land and acknowledges that the acreage development (i) is not entitled to extra buffering protection greater than the acreage property lines from existing agricultural practices and from future urbanization and (ii) waives any future right to protest the creation of lawful centralized sanitary sewer, water and paving special assessment districts or other lawful financing methods at a later date when urbanization is appropriate.

When the independent study to quantify and qualify the positive and negative economics of acreage development is completed, the county should determine if an impact fee or other development exactions are needed to be sure acreage development is paying its “fair share” of costs. The study should include a review of policy issues and options such as the build-through concept, lot size, acreage standards, acreages and town relationships, acreages and sensitive areas, agriculture, acreage clusters, desired acreage population, acreage size and land use consumption and AGR zoning. (page F79)

**Agricultural Stream Corridor:** Land intended to remain in open space, predominately in agricultural use, but that may also include parks, recreation fields, or parking areas when near future commercial, industrial, or public uses. Such areas will be primarily privately owned, but may also include some public ownership or easements. These areas are mostly in the 100 year floodplain, outside of the existing Lincoln urban development. (page F22)

**UTILITIES:** There are no sewer or water public utilities available. This is in the Norris Public Power service system.

**TOPOGRAPHY:** Gently rolling, sloping to a drainageway which drains to the north.

**TRAFFIC ANALYSIS:** This is served by State Spur 55A/S.W. 84<sup>th</sup> Street and West Old Cheney Road. SW 84<sup>th</sup> is a paved state road and Old Cheney is a graveled county road. West Old Cheney is not shown for future paving. There is a poor vertical approach and lack of a platform at the rail crossing on Old Cheney to the west of this application.

**PUBLIC SERVICE:** This is in the Southwest Rural Fire District and the Middle Creek School District. This is served by the Lancaster County Sheriff's Department.

**REGIONAL ISSUES:** Expansion of the acreage areas. Clustering to preserve farm land. Buildthrough in the growth tiers. Preservation of floodplain. Ground water quality.

**ENVIRONMENTAL CONCERNS:** The Historic and Ecological Resources survey shows no resources on this site. The soil rating on this quarter section is 5.64 on a scale of 1 to 10 where 1 is the highest and a rating of 1-4 is prime agriculture land. This is not prime ag land. However, some of the land is prime and some is not suitable for crops. About 60% of the parcel is in floodplain from Haines and Holmes creeks. Water quality is very poor.

**AESTHETIC CONSIDERATIONS:** na

**ALTERNATIVE USES:** All uses allowed in the AG district. Seven 20+ acre lots.

**ANALYSIS:**

1. This request is for a Special Permit for a Community Unit Plan for 7 acreage residential lots. A gravel private street is proposed and individual sewer and water is proposed. A dwelling unit bonus is NOT being requested.
2. This request is in general conformance with the Comprehensive Plan. However, a portion of this parcel is in Tier III where the Comprehensive Plan calls for buildthrough to apply. The buildthrough provisions are not addressed because there is currently no standard to apply. The clustering of the lots provides some provision for future growth. The Planning Department has advised Commons at its Dec 1, 2003 Commons meeting that it is our intent to have a draft Build -Through ordinance and standards for the March 2004 meeting. With this in mind, the Department recommends that the language of the Comprehensive Plan be enforced by deferring applications in Tier II and III until the Build-Through Standards are in place.
3. A waiver to the minimum lot area of 20 acres is requested. This is required to accomplish the clustering to 3 acre lots.
4. Waivers are requested for street lights, sidewalks, block length, street trees, storm drainage and screening. These are typical waivers required, provided for and appropriate for agriculture/acreage clusters.

5. The County Engineers memo of December 1, 2003 notes several corrections required, including floodplain issues, grading and access. NDOR approval is required for this access from 55A.
6. The Lower Platte South NRD notes an NPDES permit will be required from the State NDEQ if land over one acre is disturbed.
7. The Lincoln/Lancaster County Health Department notes questions on ground water, the rail line traffic and train noise.
8. Building and Safety notes the need for additional flood documentation, especially in relation to Lot 1. They also note that building a residence in the floodplain is not permitted and minimum elevations should be required for Lots 6 and 7 as well.
9. Norris Public Power is requesting easements.
10. The water report shows poor water quality and quantity;

The existing wells pumped at 3 and 20 gallons per minute and the report indicates that water should be available at rates of 15 to 20 gallons per minute. The minimum acceptable flow of a well for a residence is five (5) gallons per minute.

The water quality shows high Total Dissolved Solids, Sodium, Chlorides, Iron, Manganese, Hardness, Sulfates and Alkalinity. This poor level of quality is treatable but left untreated could cause stains, piping mineral buildup, taste and odor, as well as a laxative effect and potential issues for those on a salt restricted diet such as those with high blood pressure.

Due to the water issues, if this permit is approved, water treatment should be required for all dwellings.

11. Lot 1 has significant issues on floodplain and the ability for proper water and wastewater service. The lot should be moved to the east, out of the floodplain.
12. This proposal is requesting 7 lots. Seven dwellings would also be permitted, without review, if divided into 20 acre parcels. The CUP provides for a better layout and the application of appropriate conditions.

Planning staff recommends deferral of these applications, however, if these applications are approved, the following conditions are suggested.

CONDITIONS FOR SPECIAL PERMIT #206:

Site Specific:

1. After the applicant completes the following instructions and submits the documents and plans to the Planning Department office and the plans are found to be acceptable, the application will be scheduled on the County Board's agenda: (NOTE: These documents and plans are required by resolution/ordinance or design standards.)
  - 1.1 Revise the location of Lot 1 to an area outside the floodplain, east of the rail line and creek.
  - 1.2 Make the corrections requested by the County Engineer in his letter of December 1, 2003.
    - 1) Revise General Note #12 such that access to West Old Cheney Road shall be relinquished, except for SW 80<sup>th</sup> Court, two existing farm access locations on the west portion of Lot 2 and private driveways for Lots 2 and 3.
    - 2) R.O.W. dedication to equal a total of 60' from the section line. *(Note this is outside the 120' Comprehensive Plan ROW and only 50' can be required).*
    - 3) Revise General Note #14 to "only one residential access per lot".
    - 4) Access to State Highway 55A (SW 84<sup>th</sup> street) to be approved by N.D.O.R., since access is changing from ag use to residential use.
    - 5) A flood plain permit shall be obtained for the fill in Lot 1 prior to Preliminary Plat approval.
    - 6) The building envelope on Lot 2 is not dimensioned from the north or south boundary.
    - 7) The profile of West Old Cheney should be an actual field survey since the road was re-graded in 1988 as part of the Haines Branch bridge. The profile should extend east to show adequate sight distance for the driveway to Lot 2 and 3.
    - 8) A minimum opening elevation should be shown for Lots 6 and 7.

9) Show a place for a well and wastewater system on Lot 1 outside the 100 year flood plain.

10) The minimum opening elevation on Lot 1 shall be verified by a hydraulic study.

11) Typical section grading shall extend completely around the cul-de-sac.

12) Show provisions for matching SW 80<sup>th</sup> Court to West Old Cheney Road when it is improved and lowered.

1.3     Revise the drawing to show the purpose of Outlot "A".

1.4     Add a note that all dwellings shall have water conditioning and treatment to correct the noted water quality issues.

1.5     Receive an NPDES permit for any fill in the proposed Lot 1.

1.6     Show the easements requested by Norris Public Power.

1.7     Revise Note #12 to reflect residential access (if that is retained).

1.8     Provide Building and Safety with the required drainage studies.

2       This approval permits 7 single family lots.

General:

3.       Before receiving building permits:

3.1     The permittee is to submit a revised site plan and the plan is found to be acceptable.

3.2     The permittee is to submit six prints and a permanent reproducible final site plan as approved by the County Board.

3.3     The construction plans are to comply with the approved plans.

3.4     The final plat(s) is/are approved by the County Board.

3.5     The required easements as shown on the site plan are recorded with the Register of Deeds.

3.6. The County Board approves associated requests:

3.6.1 Four Winds Estates Preliminary Plat #03009.

3.6.2 A waiver to the sidewalk, street lights, landscape screen, stormwater detention and street tree requirements since the area is of larger lots, a rural nature and the subdivision will not be annexed.

3.6.3 A modification to the requirements of the land subdivision ordinance\resolution to permit a block length in excess of 1320' along the north, south, east and west perimeter of this subdivision.

3.7 The County Engineer has approved:

3.7.1 An agreement for street maintenance.

STANDARD CONDITIONS:

4. The following conditions are applicable to all requests:

4.1 Before occupying this Community Unit Plan all development and construction is to comply with the approved plans.

4.2 Before occupying this Community Unit Plan, City/County Health Department is to approve the water and waste water systems.

4.3 All privately-owned improvements, including street lighting, landscaping and recreational facilities, are to be permanently maintained by the owner or an appropriately established homeowners association approved by the County Attorney.

4.4 The site plan accompanying this permit shall be the basis for all interpretations of setbacks, yards, locations of buildings, location of parking and circulation elements, and similar matters.

4.5 This resolution's terms, conditions, and requirements bind and obligate the permittee, its successors and assigns.

4.6 The County Clerk is to file a copy of the resolution approving the permit and the letter of acceptance with the Register of Deeds. The Permittee is to pay the recording fee.



CONDITIONS FOR PRELIMINARY PLAT #03009:

Site Specific:

1. After the subdivider completes the following instructions and submits the documents and plans to the Planning Department office, the preliminary plat will be scheduled on the City Council/County Board agenda: (NOTE: These documents and plans are required by ordinance or design standards.)
  - 1.1 Revise the location of Lot 1 to an area outside the floodplain, east of the rail line and creek.
  - 1.2 Make the corrections requested by the County Engineer in his letter of December 1, 2003.
    - 1) Revise General Note #12 such that access to West Old Cheney Road shall be relinquished, except for SW 80<sup>th</sup> Court, two existing farm access locations on the west portion of Lot 2 and private driveways for Lots 2 and 3.
    - 2) R.O.W. dedication to equal a total of 60' from the section line. *(Note this is outside the 120' Comprehensive Plan ROW and only 50' can be required).*
    - 3) Revise General Note #14 to "only one residential access per lot".
    - 4) Access to State Highway 55A (SW 84<sup>th</sup> street) to be approved by N.D.O.R., since access is changing from ag use to residential use.
    - 5) A flood plain permit shall be obtained for the fill in Lot 1 prior to Preliminary Plat approval.
    - 6) The building envelope on Lot 2 is not dimensioned from the north or south boundary.
    - 7) The profile of West Old Cheney should be an actual field survey since the road was re-graded in 1988 as part of the Haines Branch bridge. The profile should extend east to show adequate sight distance for the driveway to Lot 2 and 3.
    - 8) A minimum opening elevation should be shown for Lots 6 and 7.

9) Show a place for a well and wastewater system on Lot 1 outside the 100 year flood plain.

10) The minimum opening elevation on Lot 1 shall be verified by a hydraulic study.

11) Typical section grading shall extend completely around the cul-de-sac.

12) Show provisions for matching SW 80<sup>th</sup> Court to West Old Cheney Road when it is improved and lowered.

1.3     Revise the drawing to show the purpose of Outlot "A".

1.4     Add a note that all dwellings shall have water conditioning and treatment to correct the noted water quality issues,

1.5     Receive an NPDES permit for any fill in the proposed Lot 1.

1.6     Show the easements requested by Norris Public Power.

1.7     Revise Note #12 to reflect residential access (if that is retained).

1.8     Provide Building and Safety with the required drainage studies.

2.     The County Board/City Council approves associated requests:

2.1     County Special Permit # 206 for the Community Unit Plan.

2.2     A waiver to the storm water detention, sidewalk, street paving, street lights, landscape screen, and street tree requirements since the area is of larger lots, a rural nature and the subdivision will not be annexed.

2.3     A modification to the requirements of the land subdivision ordinance to permit a block length in excess of 1320' along the north, south, east and west perimeter of this subdivision.

General:

3.     Final Plats will be scheduled on the Planning Commission agenda after:

3.1     Streets, drainage facilities, temporary turnarounds and barricades, and street name signs have been completed.

- 3.2 The subdivider has signed an agreement that binds the subdivider, its successors and assigns:
  - 3.2.1 To submit to the County Engineer an erosion control plan.
  - 3.2.2 To protect the remaining trees on the site during construction and development.
  - 3.2.3 To submit to lot buyers and home builders a copy of the soil analysis and water report with a condition of water treatment.
  - 3.2.4 To complete the private improvements shown on the preliminary plat.
  - 3.2.5 To maintain the outlots and private improvements on a permanent and continuous basis. However, the subdivider may be relieved and discharged of this maintenance obligation upon creating in writing a permanent and continuous association of property owners who would be responsible for said permanent and continuous maintenance. The subdivider shall not be relieved of such maintenance obligation until the document or documents creating said property owners association have been reviewed and approved by the County/City Attorney and filed of record with the Register of Deeds.
  - 3.2.6 To relinquish the right of direct vehicular access to SW 84<sup>th</sup> Street except for farm equipment and one residence (if permitted) and to West Old Cheney except for SW 80<sup>th</sup> Court, two existing farm access locations from Lot 2 and a private driveway for Lots 2 and 3..
  - 3.2.7 To comply with the provisions of the Land Subdivision Ordinance/Resolution regarding land preparation.

Prepared by:

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Mike DeKalb  
Planner  
December 12, 2003

**APPLICANT/:** Harlan and Judith Stiefel  
12700 West Van Dorn Street  
Denton, NE 68339  
(402) 440 -8556

**OWNER:** Harlan Stiefel and Judith Stiefel  
as joint tenants, with rights of survivorship

**CONTACT:** Brian D. Carstens  
Carstens and Associates  
601 Old Cheney Road, Suite C  
Lincoln, NE 68512  
434-2424



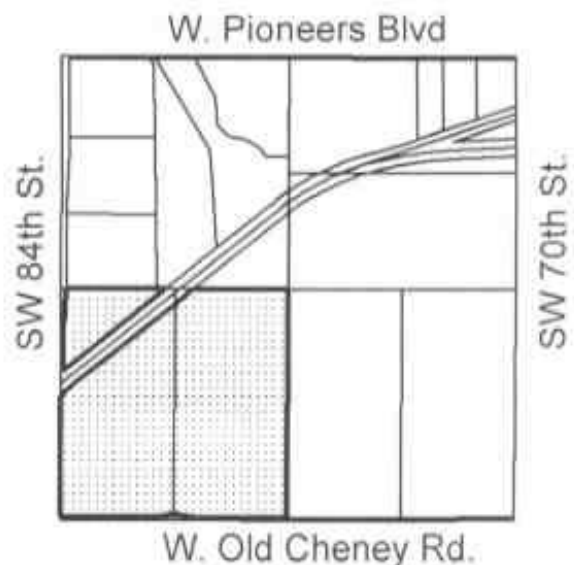
**Preliminary Plat #03009**  
**County Special Permit #206**  
**Four Winds Estates**  
**SW 84th and Old Cheney Rd.**

2002 aerial

**Zoning:**

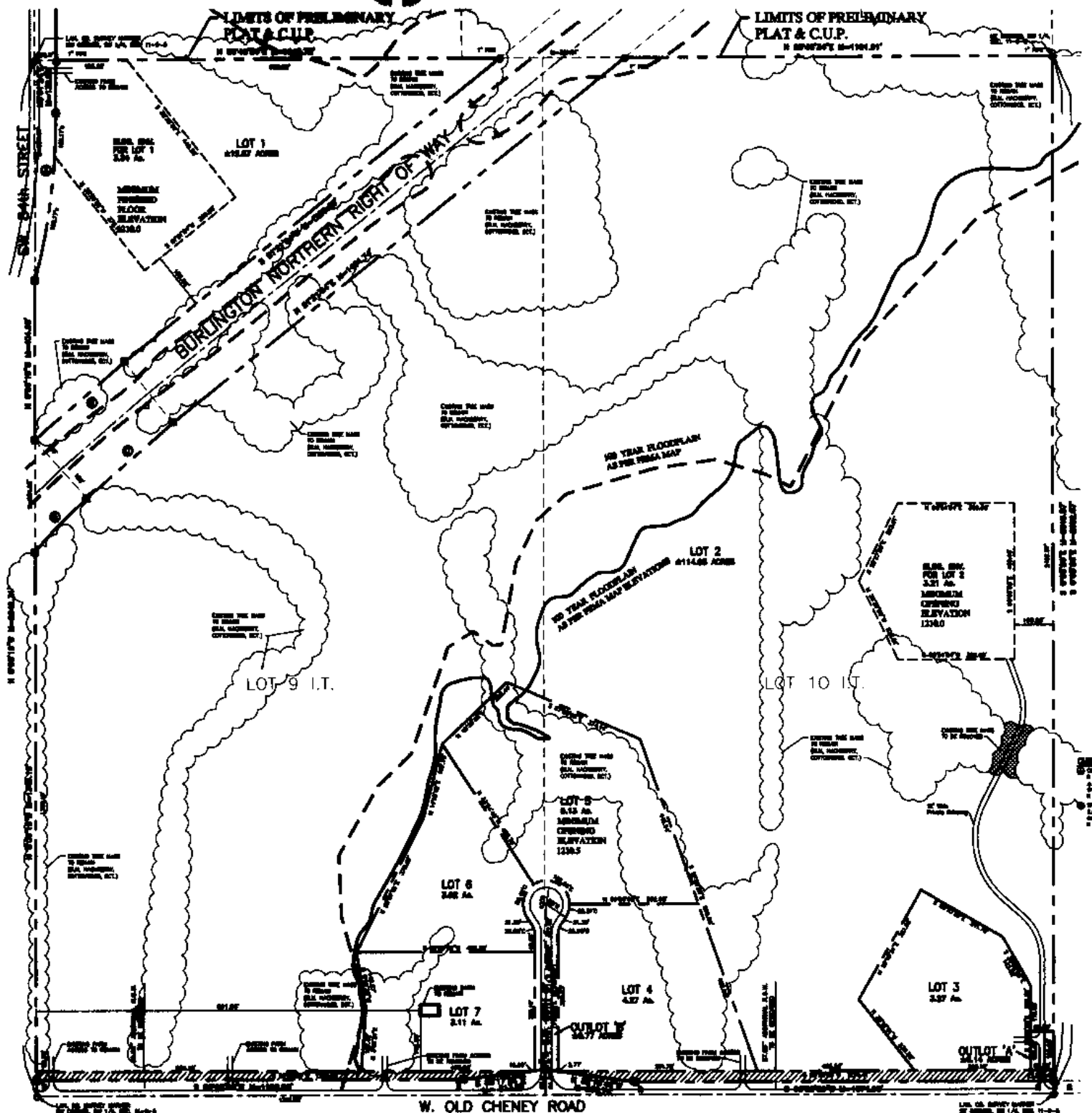
R-1 to R-8	Residential District
AG	Agricultural District
AOR	Agricultural Residential District
R-C	Residential Conservation District
O-1	Office District
O-2	Suburban Office District
O-3	Office Park District
R-T	Residential Transition District
B-1	Local Business District
B-2	Planned Neighborhood Business District
B-3	Commercial District
B-4	Lincoln Center Business District
B-5	Planned Regional Business District
H-1	Interstate Commercial District
H-2	Highway Business District
H-3	Highway Commercial District
H-4	General Commercial District
I-1	Industrial District
I-2	Industrial Park District
I-3	Employment Center District
P	Public Use District

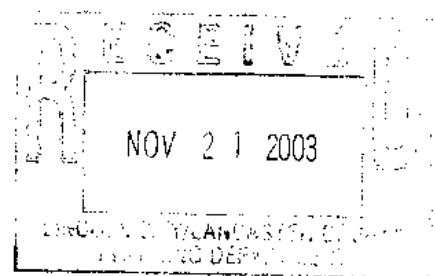
One Square Mile  
 Sec. 11 T9N R5E



The map shows a grid-like street layout. At the top is "WEST VAN DORN STREET". Below it is "WEST PIONEERS BOULEVARD". At the bottom is "WEST OLD CHENEY ROAD". On the left side, running vertically, are "S.W. BATH STREET" and "I-90 N.E. 50th St.". A diagonal line labeled "RAILROAD" runs from the upper right towards the lower left. Another diagonal line, dashed in some sections, runs parallel to the railroad and is labeled "NORTHWEST" and "SOUTHSTOWN". A small rectangle is drawn at the intersection of West Old Cheney Road and the Northwest/Southstown line.

## VICINITY MAP





## LEGAL DESCRIPTION:

LOTS 9 AND 10 IRREGULAR TRACTS, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 9 NORTH, RANGE 5 EAST OF THE 6th P.M., LANCASTER COUNTY, NEBRASKA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTHERLY ON THE EAST LINE OF SAID SOUTHWEST QUARTER, ON AN ASSIGNED BEARING OF N 0°05'56"W A DISTANCE OF 33.00', TO THE POINT OF BEGINNING, SAID POINT BEING THE SOUTHEAST CORNER OF SAID LOT 10;

THENCE ON THE SOUTH LINE OF SAID LOTS 9 AND 10, AND THE NORTH RIGHT OF WAY LINE OF WEST OLD CHENEY ROAD FOR THE NEXT FOUR (4) COURSES, S 90°00'00"W 1074.99';

THENCE N 82°19'46"W 239.74';

THENCE S 83°17'22"W 213.95'; THENCE S 90°00'00"W 1100.00', TO THE SOUTHWEST CORNER OF SAID LOT 9, SAID POINT BEING 40.00' NORTHERLY FROM THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER;

THENCE ON THE WEST LINE OF SAID LOT 9 AND THE WEST LINE OF SAID SOUTHWEST QUARTER, N 0°06'19"W 1349.19', TO A POINT ON THE SOUTHERLY RIGHT OF WAY LINE OF THE BURLINGTON NORTHERN RAILROAD, SAID POINT BEING ON A CIRCULAR CURVE TO THE RIGHT, HAVING A RADIUS OF 1889.09' AND A CENTRAL ANGLE OF 6°06'48";

THENCE NORTHEASTERLY ON THE CHORD OF SAID CURVE, N 44°24'54"E 190.80', TO A POINT ON A SPIRAL CURVE;

THENCE NORTHEASTERLY ON THE CHORD OF SAID SPIRAL CURVE, N 49°20'39"E 293.36';

THENCE N 51°21'04"E 1491.74', TO A POINT ON THE NORTH LINE OF SAID SOUTHWEST QUARTER; THENCE ON SAID NORTH LINE, N 89°46'34"E 1101.91', TO THE NORTHEAST CORNER OF SAID SOUTHWEST QUARTER;

THENCE ON THE EAST LINE OF SAID SOUTHWEST QUARTER, S 0°05'56"E 2619.57', TO THE POINT OF BEGINNING, SAID TRACT CONTAINING AN AREA OF 135.92 ACRES, MORE OR LESS.

AND

COMMENCING AT THE NORTHWEST CORNER OF SAID SOUTHWEST QUARTER; THENCE EASTERLY ON THE NORTH LINE OF SAID SOUTHWEST QUARTER ON AN ASSIGNED BEARING OF N 89°46'34"E A DISTANCE OF 55.90', TO THE POINT OF BEGINNING, SAID POINT BEING THE NORTHWEST CORNER OF SAID LOT 9;

THENCE CONTINUING ON SAID NORTH LINE, N 89°46'34"E 1145.72', TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF THE BURLINGTON NORTHERN RAILROAD;

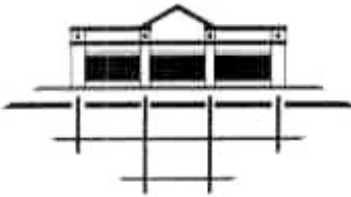
THENCE SOUTHWESTERLY ON SAID RIGHT OF WAY LINE, S 51°21'04"W 1239.63', TO A POINT ON A SPIRAL CURVE;

THENCE SOUTHWESTERLY ON THE CHORD OF SAID SPIRAL CURVE, S 49°20'50"W 305.40', TO A POINT ON THE WEST LINE OF SAID SOUTHWEST QUARTER;

THENCE NORTHERLY ON SAID WEST LINE, N 0°06'19"W 404.66', TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF SOUTHWEST 84th STREET, SAID POINT BEING ON A CIRCULAR CURVE TO THE LEFT, HAVING A RADIUS OF 1697.02 AND A CENTRAL ANGLE OF 14°34'40";

THENCE NORTHERLY ON THE CHORD OF SAID CURVE, N 7°18'44"E 430.61', TO A POINT OF TANGENCY;

THENCE ON SAID TANGENT, N 0°01'24"E 136.92', TO THE POINT OF BEGINNING, SAID TRACT CONTAINING AN AREA OF 12.67 ACRES, MORE OR LESS.



## BRIAN D. CARSTENS AND ASSOCIATES

LAND USE PLANNING RESIDENTIAL & COMMERCIAL DESIGN  
601 Old Cheney Road, Suite C Lincoln, NE 68512 Phone: 402.434.2424

November 21, 2003

Mr. Marvin Krout  
Director of Planning  
Lincoln City- Lancaster County Planning Department  
555 South 10th Street  
Lincoln, NE 68508

RE: FOUR WINDS ESTATES – COUNTY PRELIMINARY PLAT & COMMUNITY UNIT PLAN  
S.W. 84<sup>TH</sup> STREET & OLD CHENEY ROAD

Dear Marvin,

On behalf of Harlan and Judith Stiefel, we are submitting the above mentioned applications for your review. Four Winds Estates is a proposed Preliminary Plat and 'AG'-C.U.P. on approximately 148.59 acres and is currently zoned 'AG'. We are showing 7 single family acreage lots, containing a minimum of 3 acres. Each lot shall have individual water wells and individual septic systems. The proposed street shall be a private roadway will be graveled to meet Lancaster County design standards.

We are requesting waivers to the Land Subdivision Ordinance to waive sidewalks, street trees, street lighting and landscape screening, as each lot is larger than 1 acre and this project will not be annexed into the City of Lincoln in the near future.

We are not requesting the 20% bonus for the cluster at this time.

Please contact me if you have any further questions.

Sincerely,

Brian D. Carstens

cc: Harlan and Judith Stiefel

Enclosures: 24 Copies of Sheet 1 of 3  
8 Copies of Sheets 2 & 3 of 3  
County Application for a Preliminary Plat & C.U.P.  
Application Fees -\$950.00  
Certificate of Ownership  
3 Copies of the Preliminary Soils Analysis  
2 Copies of the Ground Water Report





**GROUNDWATER REPORT  
FOUR WIND ESTATES**

**SW 1/4 Sec. 11-T9N.-R5E.**

**LANCASTER COUNTY**

**Petitioner: Brian D. Carstens  
                  Brian D. Carstens & Associates  
Developer and Owners of Record:  
                  Harlan & Judith Stiefel  
Engineer: Lyle. L. Loth  
Surveyor: Bill Joe Kerr  
                  K&M Land Surveying  
Hydrogeologist and Preparer of Report:  
                  Vincent H. Dreeszen**

**November 11, 2003**

## Report of Groundwater Investigation

### FOUR WIND ESTATES SW1/4 sec. 11-9N-5E Lancaster County

Four Wind Estates is a Community Unit Plan, Special Permit at SW 84<sup>th</sup> Street and West Old Cheney Road. The plan proposes the development of 7 single family lots and 1 outlot in the SW1/4 section 11, T. 9N., R. 5E. consisting of 148.59 acres more or less. Excluded from the development is the Burlington Northern railroad Right of Way which crosses the NW1/4 SW1/4 of the section. Lot 1, consisting of about 12.87 acres lies northwest of the Burlington Northern R.O.W. includes a building lot envelope of 3.34 acres and Lot 2, consisting of about 114.93 acres and located generally in the southeast portion of the development includes a building envelope of 3.21 acres. This lot and the remainder five lots are located on the higher ground and lot sizes range from 3.11 acres to 5.13 acres. Also excluded from development of family lots in the preliminary plan are lands in the 100 year floodplain along Haines and Holmes Creeks in the western half of the section (see Figure 1).

The south boundary of the tract is West Old Cheney Road and the north boundary is the east-west half section line. The east boundary is the north-south half section line and the west boundary is State Highway 55A and Southwest 84<sup>th</sup> Street although there is no existing road in the quarter mile south of the

railroad right of way.

The Village of Denton is about one and a half mile southwest of the proposed development; Countryside Estates is about one-fourth mile southeast and development is occurring immediately north in the northwest quarter of section 11.

The developer proposes the construction of individual wells and the use of individual water waste systems, percolation tests permitting. If percolation tests do not permit subsurface fields, lagoons shall be installed.

One new test well has been constructed in Lot 6 (log and water quality analyses attached). There is an older existing well at the site of the abandoned home site on the south side of the tract. The well was test pumped at about three gallons per minute and should be properly abandoned. Also available is the log and water quality analyses of a nearby well in the southeast corner of the northwest quarter of section 11 (Log and analyses attached). A number of additional wells have been constructed in the north half of section 11.

The principal known aquifer in the area is the Dakota Sandstone Formation. There may also be a thin alluvial aquifer in the valleys of Holmes and Haines Creeks, Lot 1 for example. The top of sandstone in upland areas is expected to be around 1180 feet (plus or minus 10 feet) above mean sea level (msl). The depth to water is expected to be about 1200 feet above msl. The depth to water, depending upon land surface elevation, will

probably range from 20 to 50 feet in most of the uplands. Well depths can be expected to range from about 66 to 100 feet in the uplands.

The Dakota underlies the area in sufficient thickness to support 15 to 20 gpm wells. The water supply is adequate for the proposed development. Water quality, based upon available information, is marginal and would require extensive treatment for most household uses. Total dissolved solids are high and can be expected to range from 1200 to more than 1600 mg/l. Sodium concentrations appear to range from about 300 to 450 mg/l and chloride levels from 350 to 600 mg/l. The water is slightly saline in the two existing wells and would taste salty to the average user. Iron and Manganese concentrations combined range from 3 to 4 mg/l and are very high for household use. The water is quite hard in the two sampled wells, 230 to 295 mg/l. Nitrate-Nitrogen is very low. The new existing well (lot 6) has unsafe levels of coliform bacteria and the well would need to be properly chlorinated and retested to assure its safety.

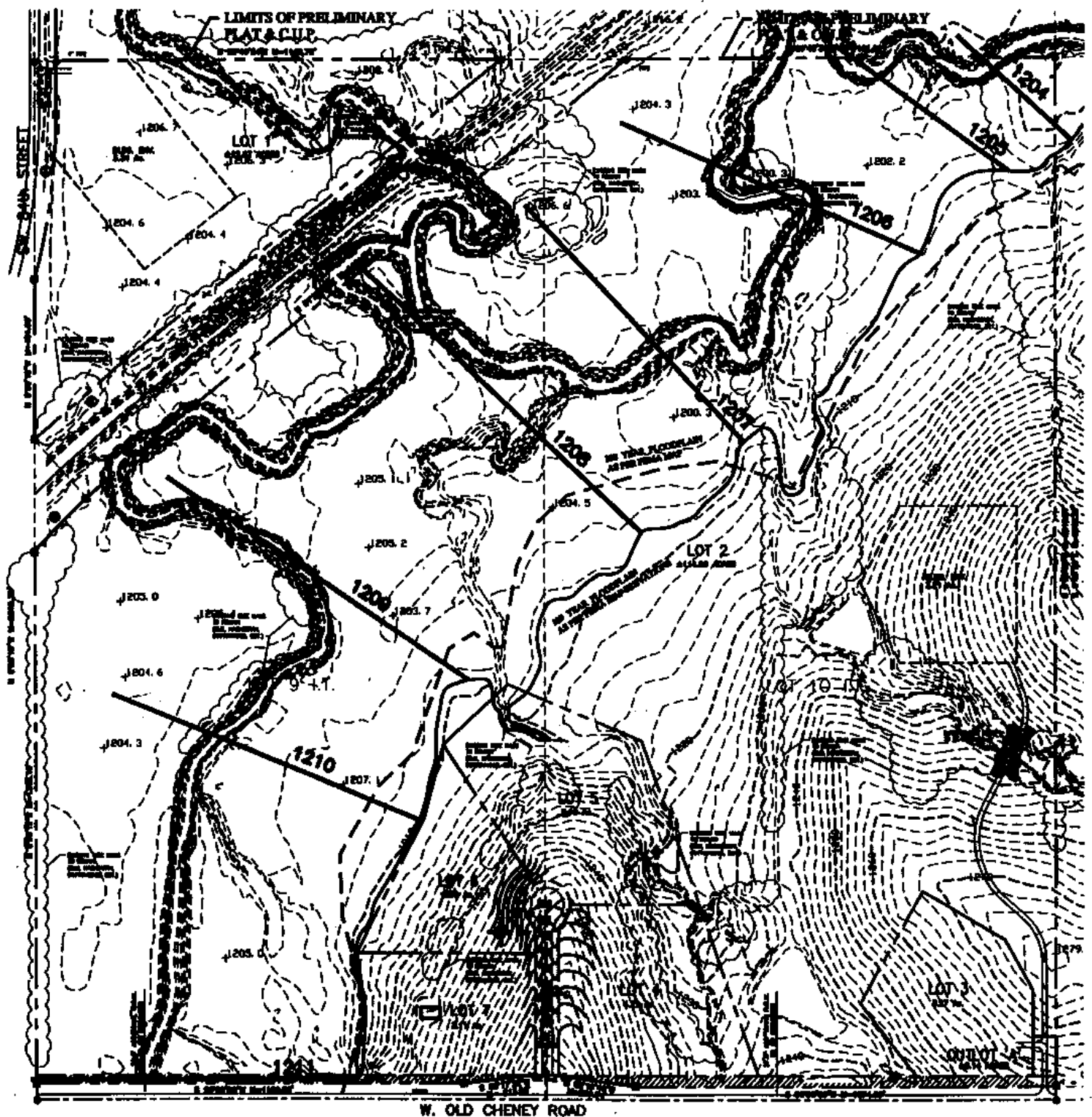
Prospective home owners should contact water treatment firms to determine methods and costs to treat the water for drinking and household uses. Comments with respect to suitability of the water for household use are included on the attached Water Analysis Reports.

Experience in this area of Lancaster County has been that mineral concentrations increase with depth of well and higher

rates of pumping. For example, water quality at either of the two wells referred to in this report might be measurably better if the wells were constructed at a lesser depth.

The well driller should be consulted before drilling a well in regard to depth and water quality. A test well should be drilled and a well constructed based upon information from the test well. The water should be analyzed by a certified laboratory for both inorganic chemicals and presence of coliform bacteria.

Figure 1



Mail to:  
PO Box 94676  
Lincoln, NE 68509-4676

Phone: (402) 471-2363

STATE OF NEBRASKA  
DEPARTMENT OF NATURAL RESOURCES  
WATER WELL REGISTRATION  
FOR DEPARTMENT USE ONLY

6-113772

July 2000  
DNR Form 505

Registration Date 1-4-2002 Sequence No. 137118 Registration No. 6-113772  
Owner Code No. 59870 Receipt No. R9632 Laurel Platte, South NRD

1. Well Owner Kenneth and Gloria Hunter Telephone Number (402) 483 4074  
Address 9330 old Cherry Rd  
City Lincoln State NE Zip Code 68536

2. Drilling Firm EARNEST WELL DRILLING INC. Telephone Number (402) 761-2281  
Address 2796 W. MILFORD RD. Contractor's License No. 39051  
City MILFORD State NE Zip Code 68405 +

3. Permit Number(s) /

4. Purpose of well (indicate one): Dewatering (over 90 days) ☒ Domestic Ground Heat Exchanger  
Ground Water Source Heat Pump Industrial Injection Irrigation (important, see 6D and 6E)  
Livestock Monitoring Observation Public Water Supply (with spacing (46-439))  
Public Water Supply (without spacing) Recovery Aquaculture  
Other  
(indicate use)

5. Replacement and abandoned well information.

A. Is this well a replacement well? Yes ☒ No

B. Registration number of abandoned well: \_\_\_\_\_

If not registered, date well construction completion 1/4/02

C. Replacement well is \_\_\_\_\_ feet from abandoned well.

D. Abandoned well last operated 1/4/02

E. Original well pump column size: \_\_\_\_\_ inches.

F. Completion of original well abandonment on 1/4/02

G. Location of water use of abandoned well: \_\_\_\_\_

6. A. Well location: NW 1/4 of the WEST 1/4 of Section 11 Township 9 North, Range 5 (East/West) LAKE County.

B. The well is 2110 feet from the (North or South) section line and 500 feet from the (East/West) section line.  
3300 ft (circle one) (circle one)

C. Street address or block, lot and subdivisions, if applicable: \_\_\_\_\_

SW, SW, NW 1/4 S. 11-9N-5E

D. Location of water use, if applicable (give legal descriptions): \_\_\_\_\_

E. If for irrigation, the land to be irrigated is \_\_\_\_\_ acres.

F. Well reference letter(s), if applicable: \_\_\_\_\_

7. Pump Information.

Is pump installed at this time: Yes ☒ No

If yes, complete items A through F.

If no, complete items A and D with estimated information for those wells in which pump will be installed.

A. Actual pumping rate, if applicable: \_\_\_\_\_ gallons per minute. Measured or Estimated

B. Drop pipe diameter: \_\_\_\_\_ inches.

C. Length of drop pipe: \_\_\_\_\_ feet.

D. Pumping equipment installed: (model) \_\_\_\_\_ (day) \_\_\_\_\_ (year) \_\_\_\_\_

R. Brand/Type: \_\_\_\_\_

F. Company Name \_\_\_\_\_

Pump Installer Name \_\_\_\_\_

Address \_\_\_\_\_

Telephone Number ( ) \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip Code \_\_\_\_\_

+

Contractor's License No. \_\_\_\_\_

8. Well Construction Information.

- A. Total well depth: 76 feet. B. Static water level: 20 feet.  
 C. Pumping water level: 30 feet Estimated or Measured (at what gallons per minute 20)  
 D. Well Construction began: 11 / 13 / 01 E. Well Construction completed: 11 / 13 / 01  
 F. Bore hole diameter: 9 inches.  
 G. Plain Casing: Diameter 4 ID 4.5 OD inches. Type of material: PVC  
 Wall thickness: .214 inch(es). Joints—Welded Glued / Threaded / Other: AND SCHEDULED  
 Placement depth(s) from 0 ft. to 56 ft. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 H. Screen: 4 ID 4.5 OD in.; Type of material PVC  
 Screen openings (slot size): .016 Trade name: YARDOFLEX  
 Placement depth(s) from 56 ft. to 76 ft. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Guides at 61-71 ft.  
 I. Gravel pack interval(s) from 20 ft. to 40 ft. from 45 ft. to 76 ft. Grade size: 25 BAGS 1650  
 J. Grouted/Sealed from 10 ft. to 20 ft., with BENTONITE AND WASHED RIVER SAND  
 from 40 ft. to 45 ft., with BENTONITE (type)  
 K. Drilling method: ROTARY L. Drilling fluid: WATER + BENTONITE (type)  
 M. Well development technique (total time and method): COMPRESSED AIR 1 HOUR  
 N. Will chemicals, fertilizer or antifreeze be injected or utilized in the system? Yes X No  
 If yes, what will be used: \_\_\_\_\_

9. Geologic Materials Logged

DEPTH IN FEET FROM	TO	DESCRIPTION	DEPTH IN FEET FROM	TO	DESCRIPTION
<u>0</u>	<u>1</u>	<u>TOP SOIL</u>			
<u>2</u>	<u>15</u>	<u>BROWN CLAY</u>			<u>Est. Elev. 1216</u>
<u>15</u>	<u>20</u>	<u>SAND (BROWN, MED)</u>			
<u>20</u>	<u>24</u>	<u>BROWN CLAY</u>			
<u>24</u>	<u>38</u>	<u>BLUE CLAY</u>			
<u>38</u>	<u>42</u>	<u>GRAVEL (SOME SMALL STONES 1"-2")</u>			
<u>42</u>	<u>47</u>	<u>LIGHT BROWN + GRAY CLAY</u>			
<u>47</u>	<u>80</u>	<u>SANDSTONE (MED. BROWN)</u>			

(Additional sheets may be submitted)

10. I am familiar with the information submitted on this registration, and to the best of my knowledge it is true.

Ben Cant III  
 Water Well Contractor's Signature

11-24-01  
 Date

[Signature]  
 Water Well Owner's Signature

\_\_\_\_\_  
 Date



Servi-Tech/Hastings 12/5/01  
TO: CLEAR CHOICE WATER COMPANY;

5:47 PAGE 1/2 1-402-463-8132



# Servi-Tech Laboratories

1802 Park West Dr. • PO Box 189 • Hastings NE 68902  
402-463-3522 • FAX 402-463-8132

## Water Analysis Report

Send To: 22127	CLEAR CHOICE WATER  621 WESTGATE BLVD LINCOLN, NE 68520	Lab No.: 431 Invoice No.: N921504 Date Received: 11/30/01 Date Reported: 12/05/02
-------------------	--	--

Result For: Analysis Description: Sample Identification:	JOHN BALL/EARNEST WELL DRILLING HOUSEHOLD WATER REPORT  <i>N.W. 84th</i> SOURCE: WELL <i>EAST SIDE</i>
--	--

SAMPLED	11/29 AT 4:00 PM	
ANALYSIS	UNIT	CONC. COMMENT
Nitrogen	mg/l NO <sub>3</sub> -N	<0.1 Safe
Chloride	mg/l Cl	340
Sulfate	mg/l SO <sub>4</sub>	138 Caution
Sulfate-Sulfur	mg/l SO <sub>4</sub> -S	46
Carbonate	mg/l CO <sub>3</sub>	<1
Bicarbonate	mg/l HCO <sub>3</sub>	323
Calcium	mg/l Ca	65
Magnesium	mg/l Mg	17
Sodium	mg/l Na	853 Very High
Fluoride	mg/l F	0.40 Low
Iron	mg/l Fe	0.100 Low
Manganese	mg/l Mn	0.200 Very High
Hardness (Calc.)	mg/l CaCO <sub>3</sub>	232.5 Very Hard
Hardness (Calc.)	mg/l CaCO <sub>3</sub>	19.6 Very Hard
Alkalinity (Calc.)	mg/l CaCO <sub>3</sub>	264.9
Electrical Conductivity	micro/cm EC	2.09 High
Water pH		8.02 Alkaline
Total Dissolved Solids	mg/l	1,353

CAUTION WARNING UNSAFE

Nitrate-Nitrogen Sulfate

PAGE 1 OF 2

NOT THE BEST WATER TEST. I WOULD  
PREFER TO TRY A ~~WATER~~ WELL  
NOT SO DEEP INTO THE SANDSTONE.

THANK YOU

Well Log Lot 6 Brian Carstens 10/20/2003  
Earnest Well Drilling

Four Wind Estates

SE. SW. SE Sec 11-9N-5E

0-1	Top Soil
1-4	Brown Clay
4-4.5	Loose Rocks (1" to 3")
4.5-9	Sand
9-14	Tan Clay
14-15	Rock (hard)
15-30	Brown, Yellow, and Red Clay
30-42	Tan and Rust Colored Clay
42-44	Sand
44-56	Tan Clay
56-60	Gray Clay
60-65	Sandstone (brown, fine)
65-67	Brown Clay
67-80	Sandstone (brown, fine)

# Servi-Tech Laboratories

1602 Park West Dr. • PO Box 169 • Hastings, NE 68902  
www.servitechlabs.com

Phone: 402.463.3522  
800.468.5411  
Fax: 402.463.8132

## Water Analysis Report

Send To: 26108	HAGUE QUALITY WATER JEFF WHITE 5900 N 58, SUITE 1 LINCOLN, NE 68507	Lab No.: 257 Invoice No.: N926895 Date Received: 10/21/03 Date Reported: 10/22/03
-------------------	--	--

Results For: Analysis Description: Sample Identification:	EARNEST WELL/TIM STIEFEL HOUSEHOLD WATER REPORT <i>Four Wind Estates</i> SOURCE: NEW WELL Lot 6
---	--

SAMPLED 10/20 AT 5:15 PM

ANALYSIS	UNIT	CONC.	COMMENT
Coliform Bacteria:			
Total Coliform	Colonies/100 ml	PRESENT	Unsafe: Bacteria Present
Nitrogen:			
Nitrate	mg/l NO3-N	<0.1	Safe
Chloride	mg/l Cl	578	
Sulfate	mg/l SO4	117	Low
Sulfate-Sulfur	mg/l SO4-S	39	
Bicarbonate	mg/l HCO3	382	
Calcium	mg/l Ca	85	
Magnesium	mg/l Mg	20	
Sodium	mg/l Na	416	Extremely High
Potassium	mg/l K	7	
as K2O (Calc.)	mg/l K2O	8.4	
Iron	mg/l Fe	0.300	High
Manganese	mg/l Mn	0.108	Very High
Total Dis. Solids (Calc.)	mg/l	1,581	High
Hardness (Calc.)	mg/l CaCO3	294.8	Very Hard
Hardness (Calc.)	grains/gal CaCO3	17.2	Very Hard
Alkalinity (Calc.)	mg/l CaCO3	319.0	
Electrical Conductivity	mmho/cm EC	2.47	High
Water pH		7.65	Alkaline

**SHOCK CHLORINATION:** Depending on well size, pour 1 to 2 lbs of granular calcium hypochlorite (available from swimming pool suppliers) or 1 to 2 gals of chlorine bleach into well. Open faucets to fill all fixtures, appliances, and all hot and cold water lines with chlorinated water. Allow water to remain in the water system for 10 hours. Pump until no chlorine odor can be detected. Use water normally for about a week, then RETEST FOR BACTERIA. If bacteria is still present, your water system may need to be inspected by an official of your local or state Department of Health.

**NITRATE-NITROGEN:** The U.S. Public Health Service considers water with NO3-N levels below 10 mg/l to be acceptable for all uses (below the standard). Recommend testing for nitrate each year until a consistent record of low nitrate is established.

**Servi-Tech Laboratories**1602 Park West Dr. • PO Box 169 • Hastings, NE 68902  
www.servitechlabs.com

Phone: 402.463.3522

800.468.5411

Fax: 402.463.8132

# Water Analysis Report

Send To: 26108	HAGUE QUALITY WATER JEFF WHITE 5900 N 58, SUITE 1 LINCOLN, NE 68507	Lab No.: 257	Invoice No.: N926895
		Date Received: 10/21/03	Date Reported: 10/22/03

Results For: Analysis Description: Sample Identification:	EARNEST WELL/TIM STIEFEL HOUSEHOLD WATER REPORT - (CONTINUED) SOURCE: NEW WELL
---	--

SAMPLED 10/20 AT 5:15 PM

**SODIUM:** Individuals on a restricted sodium diet should consider the contribution of the sodium in this drinking water when planning diets. Each 1 mg/l (part per million) sodium in this drinking water is equivalent to 1.1 mg (milligram) per quart. It may be possible to adjust treatment equipment or use a potassium regenerant material to reduce the sodium level. Consult your physician if dietary sodium is a concern.

**SULFATE:** No health effects expected at levels <250 mg/l.

**IRON AND MANGANESE:** May cause disagreeable taste, staining, or deposits. Water treatment is suggested to remove iron or manganese. Consult with a water treatment firm to choose the best treatment method.

**HARDNESS:** Hard water requires more detergent for cleaning and often forms "soap scum". When heated above 140 degrees F, hardness minerals may form scale deposits in plumbing and appliances. Pretreatment with a water softener or softening agent may be beneficial. If water is heated or frozen, minerals may precipitate and form deposits in ice and beverages.

**TOTAL DISSOLVED SOLIDS (or total soluble salts):** This water may have a laxative effect on individuals not accustomed to drinking it.

PAGE 2 OF 2

9

Nebraska Health and Human Services  
Regulation and Licensure - Laboratory Services  
3701 South 14th Street  
Lincoln, NE 68502  
(402) 471-2122  
(402) 471-2080 (fax)

Laboratory Report Printed on: MAY-07-03

STIFFELTIM  
STIFFEL, TIM

12700 WEST VAN DORN  
DENTON, NE 68339

**Laboratory Analysis for: Private Nitrate**

**Sample Comments:**

Laboratory Number: P22846-8

Date Collected: 04-May-2003 02:45 PM

Sampled By: TIM STIFFEL

Date Received: 05-May-2003

Location: 8101 W OLD CHENEY N

Well ID:

Parameters	Test Results	Qual	Report Level	Units	Method	Prep Date	Analysis Date	Analyst
Nitrate+Nitrite (As N)	353.2		.05	mg/l	353.2		05/06/03	sr

Note: see reverse side of report for description of acronyms and data qualifiers  
For inquiries on result interpretation call: (402) 471-2541

## A-1. Glossary

**Adsorption** A physical/chemical process in which materials stick to (are adsorbed on) other materials.

**Annular space** The space between the outside of the well casing and the drilled hole.

**Aquifer** A porous, water-bearing geologic formation capable of yielding an appreciable supply of water to a well or spring. Also called a groundwater aquifer.

**Artesian aquifer (confined aquifer)** An aquifer in which the water is confined by both an upper and lower impermeable layer.

**Casing (cased section)** A pipe-like material that lines the bore hole of a well forming the upper section.

**Cone of depression** A funnel-shaped volume, within the *radius of influence*, that forms around a well during pumping.

**Consolidated formations** Formations of relatively large, unmoving pieces of material, such as particles of limestone and fractured rock.

**Drawdown** The difference between the *static water level* (SWL) and the *pumping water level* (PWL) in a well.  
 $\text{Drawdown} = \text{PWL} - \text{SWL}$

**Impermeable** Not capable of being penetrated, or watertight—as in the case of rock or soil not allowing the passage of water.

**Intake section** The lower part of the well, which lets water in while keeping aquifer materials out.

**Percolate (infiltration)** The movement or flow of water through the pores of soil, usually downward.

**Permeability (hydraulic conductivity)** The capacity of an aquifer to permit the movement of water. Also, a measure of how easily water flows through a material.

**Pilot hole** A test well.

**Porosity** The percentage of voids or porous openings in rock or soil that can be filled with water. An indication of how much water an aquifer can store.

**Pumping water level** The water level in the well during pumping (usually measured from the ground surface).

**Radius of influence** The distance from the center of a well to the outermost point of the cone of depression where the drawdown approaches zero.

**Recharge** The process by which an aquifer is replenished with water.

**Recharge area** An area in which water *percolates* into aquifers from precipitation and by infiltration from surface streams, lakes, reservoirs, and snow melt.

**Static water level (nonpumping water level)** The water level in the well prior to pumping (usually measured from the ground surface).

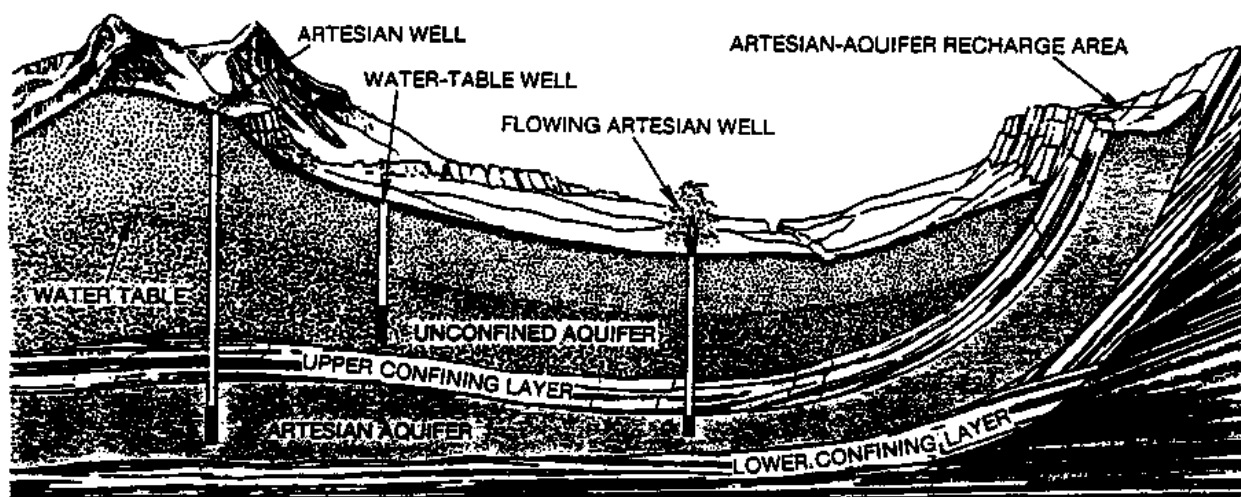
**Unconsolidated formations** Formations of materials that are loose and soft, such as sand, gravel, silt, and clay.

**Water table** Within an unconfined aquifer, the uppermost extent of water.

**Water-table aquifer (unconfined aquifer)** An aquifer confined only by the lower impermeable layer.

**Well development** The removal of fine aquifer material and leftover drilling mud from the intake area of a well, in order to provide a good flow of water into the intake screen.

## A-2. The Ground-Water Resource



## A-3. Potential Sources of Ground-Water Contamination

Source	Possible Major Contaminants
Landfills Municipal Industrial	Heavy metals, chloride, sodium, calcium Wide variety of organic and inorganic constituents
Hazardous waste disposal sites	Wide variety of inorganic constituents (particularly heavy metals such as hexavalent chromium) and organic compounds (pesticides, solvents, PCBs)
Liquid waste storage ponds (lagoons, leaching ponds, and evaporation basins)	Heavy metals, solvents, and brines
Septic tanks and leach fields	Organic compounds (solvents), nitrates, sulfates, sodium, and microbiological contaminants
Deep-well waste injection	Variety of organic and inorganic compounds
Agricultural activities	Nitrates, herbicides, and pesticides
Land application of wastewater and sludges	Heavy metals, organic compounds, inorganic compounds, and microbiological contaminants
Infiltration of urban runoff	Inorganic compounds, heavy metals, and petroleum products
Deicing activities (control of snow and ice on roads)	Chlorides, sodium, and calcium
Radioactive wastes	Radioactivity from strontium, tritium, and other radionuclides
Improperly abandoned wells and exploration holes	Variety of organic, inorganic, and microbiological contaminants from surface runoff and other contaminated aquifers

## A-4. Common Ground-Water Quality Problems

Constituent	Source	Type of Problem	USEPA* Primary Drinking Water Standards	USEPA† Secondary Drinking Water Standards
<b>Inorganic Constituents</b>				
Arsenic	Naturally occurring‡	Toxic	0.05 mg/L	
Fluoride	Naturally occurring	Stains teeth, can cause tooth damage at high levels	2.4 mg/L	
Hydrogen sulfide	Naturally occurring	Offensive odor, flammable, corrosive		0.05 mg/L
Iron	Naturally occurring	Stains plumbing fixtures and laundry, causes tastes		0.3 mg/L
Manganese	Naturally occurring	Discolors laundry and plumbing fixtures, causes tastes		0.05 mg/L
Nitrate	Fertilizer and fecal matter	Toxic to infants	10 mg/L (as nitrogen)	
Radioactivity	Naturally occurring	Cancer-causing	Gross alpha activity (15 pCi/L) Radium 226 and 228 (5pCi/L)	
Sodium	Naturally occurring	May contribute to high blood pressure		Being investigated
Sulfate	Naturally occurring	Laxative effect		250 mg/L
Total dissolved solids	Naturally occurring	Associated with taste, scale formation, corrosion, hardness		500 mg/L
<b>Organic Constituents</b>				
Pesticides and herbicides	Agricultural and industrial contamination	Many are toxic, cause tastes and odors	Several are regulated	
Solvents	Industrial contamination	Many are toxic, cause tastes and odors	Being developed	
<b>Microbiological Constituents</b>				
Disease-causing microorganisms	Fecal contamination	Cause variety of illnesses	Coliform bacteria are regulated as indicator organism	
Iron bacteria	Contamination from surface	Produce foul smelling slimes, which plug well screens, pumps, and valves		
Sulfate-reducing bacteria	Contamination from surface	Produce foul smelling and corrosive hydrogen sulfide		

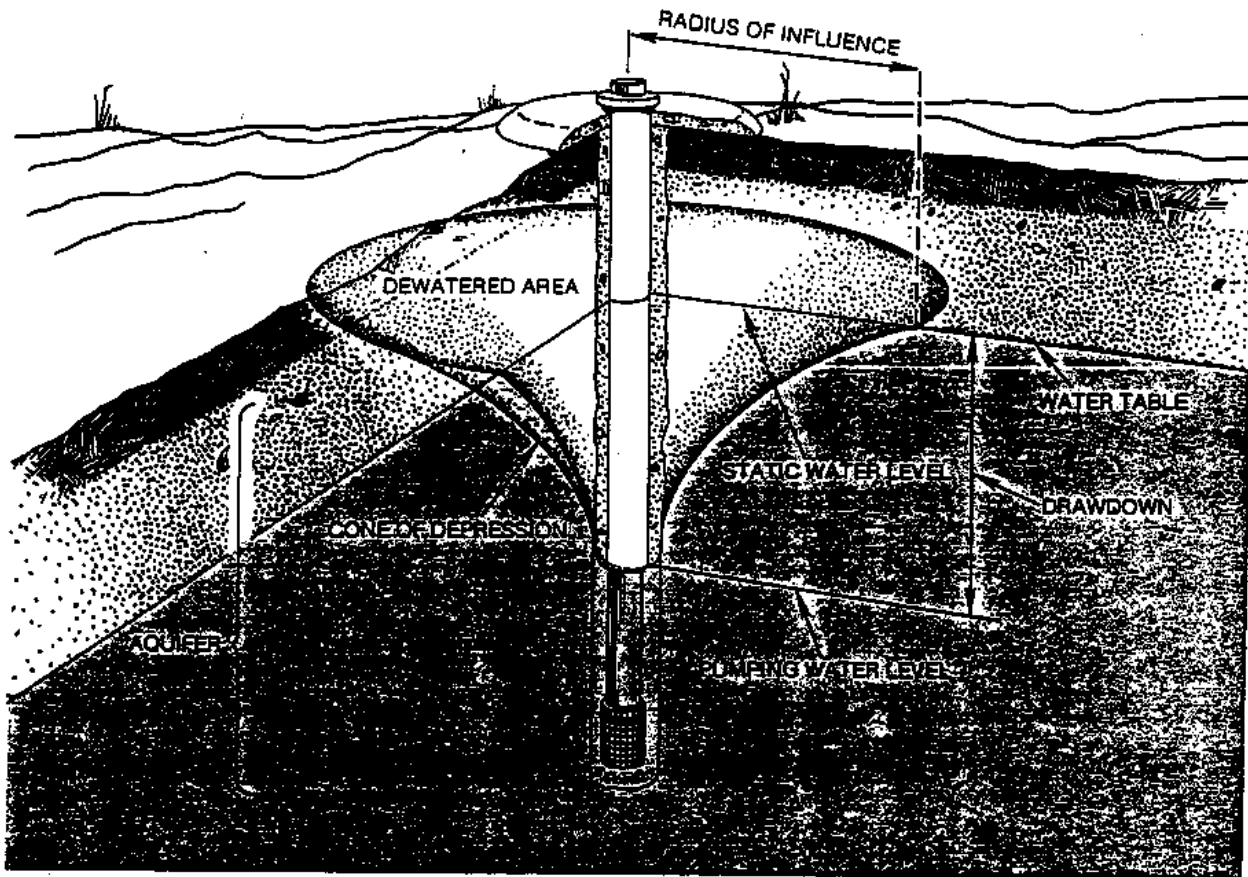
\*State regulations may be more restrictive.

†Not enforceable at federal level.

‡The naturally occurring elements can also be present due to man-made contamination.



## A-5. Common Water Well Terms and Measurements



## Ground Water Constituents

Ground Water Constituents	Sample Results	Recommended Drinking Water Limits	Recommended Livestock Limits	Recommended Crop Limits
Sample Date		-	-	-
Total Well Depth (feet)		-	-	-
Specific Conductance (us\cm)		700-800	7500	750-1500
pH (S.U.)		6.5-8.5		
Hardness (mg\L)		350-500		
Alkalinity (mg\L)		>60		
Calcium (mg\L)				
Magnesium (mg\L)				
Sodium (mg\L)		20		
Potassium (mg\L)				
Sulfate (mg\L)		250		
Chloride (mg\L)		250	1000-3000	350
Fluoride (mg\L)		2.0	2.0	1.0
Silica (mg\L)		50-100		
Iron (mg\L)		0.3		5
Manganese (mg\L)		0.05		0.2
Total Dissolved Solids (mg\L)		500	5000	500-1000
Nitrate-Nitrogen (mg\L)		10	45	
Radon (pCi\L)		300		

**Pesticides analyzed for were:** Acetochlor, Alachlor (Lasso), Ametryn, Atrazine (Aatrex), Benfluralin (Balan), Butachlor, Butylate (Sutan), Chlorpyrifor (Dursban or Lorsban), Cyanazine (Bladex), Dimethenamid, De-ethylatrazine, De-isopropylatrazine, EPTC (Eptam, Eradicane), Ethalfluralin (Sonalan), Fonofos (Dyfonate), Metolachlor (Dual), Metribuzin (Sencor), Pendimethalin (Prowl), Phorate (Thimet), Prometon (Pramitol), Prometryn, Propachlor (Ramrod), Propazine (Milogard), Simazine (Princep), Terbufos (Counter), Triallate (Far-go), and Trifluralin (Treflan).

us\cm = microsiemens per centimeter

mg\L = milligrams per liter (equivalent to parts per million, ppm)

ug\L = micrograms per liter (equivalent to parts per billion, ppb)

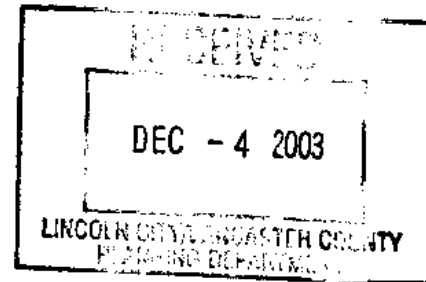
pCi\L = pico Curies per liters

Source, Lower Platte South NRD, Dec 2003



AREA 2  
SERVICE CENTER

R.R. 1 BOX 58  
ROCA, NEBRASKA 68430  
402/423-3855  
FAX 402/423-8090



December 3, 2003

Mike Dekalb, Project Planner  
555 S. 10<sup>th</sup> St. #213  
Lincoln, NE 68508

RE: Four Winds Estates

Dear Mike,

I have reviewed the subject plat and drawn in proposed easements. I have requested our standard 10' along all frontages, and 10' [ 5' each side ] of adjoining property lines.

Thanks for your cooperation.

Sincerely,


Rick Volmer, Construction Superintendent Area 2

**LOWER PLATTE SOUTH  
NATURAL RESOURCES DISTRICT**



3125 Portia St., Box 83581, Lincoln NE 68501-3581  
(402) 476-2729 • FAX (402) 476-6454  
www.lpsnrd.org

**Memorandum**

**Date:** December 2, 2003  
**To:** Mike DeKalb, Planning Dept.  
**From:**  J.B. Dixon, Stormwater Specialist, Lower Platte South Natural Resources District  
**Subject:** Four Wind Estates (Preliminary Plat #03009, CUP #206)

---

We have reviewed the Preliminary Plat of the project above. The location of the development site lies outside the City of Lincoln's 3-mile jurisdiction limit. Therefore, the landowner will not be required to submit a Local NPDES Permit and Stormwater Pollution Prevention Plan for land disturbance greater than one acre, to our office. The landowner will, however, need to obtain a State NPDES Permit and Stormwater Pollution Prevention Plan from the Nebraska Department of Environmental Quality, if land disturbance is greater than one acre.

If you have any questions, please feel free to contact me.

JBD/jbd

pci file

**LINCOLN-LANCASTER COUNTY HEALTH DEPARTMENT  
INTER-OFFICE COMMUNICATION**

**TO:** Mike DeKalb

**DATE:** December 2, 2003

**DEPARTMENT:** Planning

**FROM:** Chris Schroeder  
Jerry Hood

**ATTENTION:**

**DEPARTMENT:** Health

**CARBONS TO:** EH File  
EH Administration

**SUBJECT:** Four Wind Estates  
PP #03009 CUP #206

The Lincoln-Lancaster County Health Department (LLCHD) has reviewed the proposed Four Wind Estates with the following items noted:

- Water supply is projected to be individual wells. The LLCHD has limited information regarding wells in this area, but advises that it is likely that salty and highly mineralized groundwater may be encountered in this area. Quantity of groundwater is unknown.
- Sewage disposal is projected to be individual sewage systems. The Lots 4 through 7 are located in an area with three different series of soils, Shelby Clay Loam, Steinauer Loam, and Burchard Clay Loam. It would be expected that some of these lots may not be suitable for septic systems. Lot 3 appears Steinauer Clay Loam which may not support a septic system. With this information, the LLCHD insists that sewage lagoons not be excluded from this subdivision. Lot 2 has some Steinauer Clay Loam but in the north has some Dickinson Fine Sandy Loam and Judson Fine Sandy Loam both of which would be ideal for septic systems. It is noted that Lot 1 is located entirely within the flood plain and has Lamo Silty Clay Loam and is not acceptable for sewage systems.
- A rail line is located approximately 250 feet from the proposed Lot 1. Trains are known to carry hazardous chemicals/materials in large quantities. The LLCHD does have concerns regarding the possibility of hazardous materials incidents involving trains with residences in relative close proximity.
- Due to the close proximity to the rail line, Lot 1 could be impacted by noise pollution from trains. The LLCHD advises that Lancaster County does not currently have a noise resolution in place to address such noise pollution sources.

- All wind and water erosion must be controlled during construction. The Lower Platte South Natural Resources District should be contacted for guidance in this matter.
- During the construction process, the land owner(s) will be responsible for controlling off-site dust emissions in accordance with Lincoln-Lancaster County Air Pollution Regulations and Standards Article 2 Section 32. Dust control measures shall include, but not limited to application of water to roads, driveways, parking lots on site, site frontage and any adjacent business or residential frontage. Planting and maintenance of ground cover will also be incorporated as necessary.



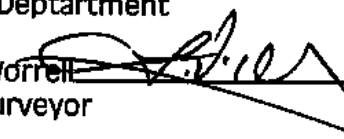
Lancaster  
County

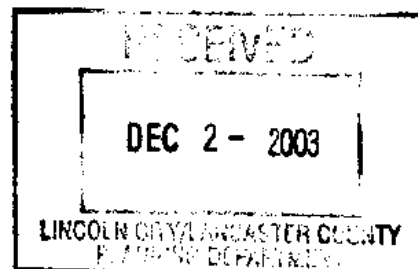
Engineering

Department

DON R. THOMAS - COUNTY ENGINEER

DEPUTY- LARRY V. WORRELL  
COUNTY SURVEYOR

**DATE:** December 1, 2003  
**TO:** Mike DeKalb  
Planning Department  
**FROM:** Larry V. Worrell   
County Surveyor  
**SUBJECT:** FOUR WINDS ESTATES  
PRELIMINARY PLAT AND C.U.P. #03009



Upon review, this office would have the following comments:

- 1) Revise General Note #12 such that access to West Old Cheney Road shall be relinquished, except for SW 80<sup>th</sup> Court, two existing farm access locations on the west portion of Lot 2 and private driveway for Lots 2 and 3.
- 2) R.O.W. dedication to equal a total of 60' from section line.
- 3) Revise General Note #14 to "only one residential access per lot."
- 4) Access to State Highway 55A (SW 84<sup>th</sup> Street) to be approved by N.D.O.R., since access is changing from ag use to residential use.
- 5) A flood plain permit shall be obtained for the fill in Lot 1 prior to Preliminary Plat approval.
- 6) The building envelope on Lot 2 is not dimensioned from the north or south boundary.
- 7) The profile of West Old Cheney should be an actual field survey since the road was regraded in 1988 as part of the Haines Branch bridge. The profile should extend east to show adequate sight distance for the driveway to Lot 2 and 3.
- 8) A minimum opening elevation should be shown for Lots 6 and 7.
- 9) It does not appear there is a place for a well and wastewater system on Lot 1 since it is entirely in the 100 year flood plain.

**SUBJECT:**     **FOUR WINDS ESTATES**  
              **PRELIMINARY PLAT AND C.U.P. #03009**

- 10)     The minimum opening elevation on Lot 1 shall be verified by a hydraulic study.
- 11)     Typical section grading shall extend completely around the cul-de-sac.
- 12)     When West Old Cheney Road is Improved, the Intersection with SW 80<sup>th</sup> Court will be lowered considerably. Provisions shall be made to allow for this future grading.





**John P Callen**

12/12/2003 09:37 AM

To: Michael V Dekalb/Notes@Notes  
cc: Dale L Stertz/Notes@Notes  
Subject: Four Winds Estates Submittal

Mike,

Upon reviewing this proposed development, Building and Safety has the following comments regarding flood plain issues:

- Flooding risk for proposed Lot 1 is due to Holmes Creek, not Haines Branch. Base flood elevations determined for Haines Branch are not valid in the northwest corner of the site, west of the Burlington Northern right of way, where proposed lot 1 is located. Because of this, a detailed study would be necessary to identify flood risk for that proposed lot.

- Also, based on discussions with County staff, it appears that placement of proposed lot 1 within the floodplain is not allowed by County Subdivision regulations.

- Finally, it is noted that there are some drainage channels in the area that are not within the mapped floodplain. Since little is known about the flooding risk from these channels, creating minimum opening elevations based upon drainage channel elevation rather than base flood elevation for Haines Branch may be advisable. However, it is also noted that these drainage channels do already have a buffer area that will be maintained by leaving existing tree mass in place.

Also, it may be advisable to require minimum opening elevations for proposed lots 6 and 7, due to their proximity to the floodplain.

Please let me know if you have any questions.

John P. Callen  
Associate Engineer  
City of Lincoln Dept. of Building and Safety  
(402) 441-4970

**LINCOLN-LANCASTER COUNTY HEALTH DEPARTMENT  
INTER-OFFICE COMMUNICATION**

**TO:** Mike DeKalb

**DATE:** December 12, 2003

**DEPARTMENT:** Planning

**FROM:** Jerry Hood

**ATTENTION:**

**DEPARTMENT:** Health

**CARBONS TO:** EH File  
EH Administration

**SUBJECT:** Four Winds  
PP #03009 CUP #206  
Water Report Analysis

The Lincoln-Lancaster County Health Department (LLCHD) has reviewed the water report for the proposed Four Winds development with the following items noted:

- The water in this area is of very poor quality. Iron and Manganese are high causing staining of laundry and fixtures, and affecting taste.
- Sodium and chloride levels are high indicating the water is considerably 'salty'. Persons with high blood pressure or on a low salt diet should avoid consuming this raw water. Hardness is very hard and total solids are very high.
- No one water treatment system can make this water palatable. Most likely treatment would involve the use of a combination of systems including iron removal device, water softener, and a reverse osmosis unit to create a desirable water supply.
- It is also noted that wells in this area are of necessity shallow. Shallow wells are more prone to have pollutants from off the surface of the ground than deep wells.
- Unknown to the LLCHD was the presence of an existing well at the abandoned home site. This well must be properly abandoned by a licensed well driller. A well that produces three gallons per minute is not sufficient for a residential home.